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09/711,362	11/10/2000	Yoshiaki Yokoyama	Yaguchi-0016	6786

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EXAMINER

LEUNG, JENNIFER A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 05/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/711,362

Applicant(s)

YOKOYAMA ET AL.

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's amendment submitted on February 25, 2005 has been received and carefully considered. Claims 21-36 are cancelled. Claims 1-20 remain active.

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tejima et al. (JP 9-248549) in view of Bassereau (US 2,446,403).

Regarding claims 1 and 5, Tejima et al. discloses a treatment apparatus comprising a first hermetic chamber (i.e. airtight container **601** comprising heating means for vaporizing metal) having a first opening (i.e. right wall in FIG. 8) and a first hermetic door placed outside the first hermetic chamber, capable of opening and closing the first opening (i.e. partition **610**; section [0294]). Tejima et al. is silent as to the apparatus further comprising, "a tube capable of inserting into the first opening," wherein the tube comprises a second opening on a side facing the first hermetic chamber **601**, a third opening on the tube, and means for cooling the tube when the tube is inserted into the first opening, and wherein the door **610** for the first opening is shielded from the first hermetic chamber **601** when the tube is inserted into the first open.

Bassereau (column 2, lines 27-48; column 3, line 61 to column 4, line 42; Figure) teaches an apparatus for the recovery of metallic vapor from a treatment operation (column 3, lines 45-54), wherein the apparatus comprises a removable tube (i.e., condenser **4a**, comprising a cylinder of sheet metal having an opening on the furnace side and another opening **4c** for permitting

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pressure balance within and outside of tube **4a** on the opposite side), capable of being inserted into an opening of a hermetic chamber (i.e., an opening as defined by annular flange **2a** of furnace **1**), wherein the hermetic chamber comprises a sealing means having a hermetic door placed outside of hermetic chamber **1** (i.e., movable closure plate **9**). Bassereau teaches that during an inserting operation (i.e., during condensation of metallic vapors generated by furnace **1**), hermetic door **9** is shifted to position **9a** (i.e., to interior of fluid-tight compartment **10**) such that the door **9** is shielded from hermetic chamber **1** when tube **4a** is inserted into opening **2a**. At the end of a condensation operation, tube **4a** is removed from opening **2a** and shifted to a recovery chamber (i.e., auxiliary chamber **7**), and the hermetic door **9** is subsequently closed (i.e., position **9b**), thus maintaining air-tight conditions for both chambers **1** and **7**. The apparatus further comprises a means for cooling the tube **4a** when the tube is inserted into the first opening (i.e., using temperature regulating means **6**, column 3, lines 69-71).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the metallic vapor recovery apparatus of Bassereau to the apparatus of Tejima et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the transfer of metallic vapors from the hermetic chamber using a condenser tube **4a** maintains a constant vacuum during the transfer operation, thereby minimizing undesired oxidation of the metal or movement of dust (column 1, lines 16-36), as taught by Bassereau. Additionally, the apparatus of Bassereau enables the vaporized metal to be transferred to from the location of the hermetic chamber to another location for further treatment without the interruption of the vacuum conditions (column 3, lines 34-44).

In view of the newly added limitation, the collective teaching of Tejima and Bassereau is

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silent as to the first hermetic door being positioned between the second and third openings of the tube when the insertion of the tube into the first opening *is completed*. In contrast, Bassereau illustrates the door 9 being located beyond the third opening 4c of the tube 4a when the insertion of the tube into the first opening 2a is completed (see FIG. 1). However, Bassereau (column 2, lines 40-43) further teaches,

*“In all cases, the sealing means [9] is preferably placed beyond range of the vapors and is not exposed to deterioration by these vapors and metallic deposits.”*

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to position the first hermetic door between the second and third openings of the tube, when tube insertion is completed, in the modified apparatus of Tejima et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the shifting of location or arrangement of parts merely involves routine skill in the art, and one of ordinary skill in the art would have realized to locate the first hermetic door at such a location, beyond the range of vapors, in order to minimize the exposure of the door to deterioration by the vapors and metallic deposits, as suggested by Basserau.

Regarding claim 2, Tejima et al. discloses an exhaust system (i.e., exhausting system 603; FIG. 6) for exhausting the contents of the first hermetic chamber 601. Thus, in the modified apparatus, the exhaust system 603 exhausts the first hermetic chamber 601 via the second opening and third opening of the tube when the tube is inserted into the first opening (i.e., via condenser 4a, opening 4c and outlet 7a, as taught by Bassereau; column 4, lines 19-35; Figure).

Regarding claim 3, Tejima et al. discloses an exhausting system 603 (FIG. 6) for exhausting the contents of the first hermetic chamber. Thus, the modified apparatus of Tejima et

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al. is capable of maintaining a vacuum state within the first hermetic chamber **601** when the first door **610** is closed during tube replacement (see also column 1, lines 39-49, and column 4, lines 19-35, of Bassereau).

Regarding claim 4, in the modified apparatus of Tejima et al., the exhaust system **603** exhausts the first hermetic chamber **601** when the first door **610** is at an opened position (see Bassereau, column 4, lines 30-33), and the exhaust system **603** is isolated from the first hermetic chamber **601** when the first hermetic door **610** is at a closed position, so that the tube is allowed to be replaced (see Bassereau, column 4, lines 37-42; also column 3, lines 17-26).

Regarding claim 6, Tejima et al. discloses means for regulating a temperature of the first hermetic chamber **601** when the first hermetic door **610** is at an open or closed position (i.e., control means comprising "Temperature Adjusting Means" for chamber **601**; see FIG. 7).

Regarding claim 7, Bassereau teaches the recovery apparatus comprises means, placed along the inserting direction of tube **4a**, for guiding a tube inserting operation (i.e., rollers **20**, flange **2a**, rod **12**; see Figure; column 4, lines 19-36).

Regarding claims 8 and 9, Tejima et al. (FIG. 2, 9) discloses an embodiment of the invention wherein a plurality of first hermetic chambers (i.e. **102**, **103**) are linearly arranged, said chambers being partitioned off by openable and closeable partitions **105c**, **105d**. As modified by Bassereau, a tube and hermetic door would inherently be provided at each of the openings.

Regarding claim 10, Tejima et al. (FIG. 8; section [0294]) discloses a second hermetic chamber (i.e. recovery chamber **611**) adjoining the first hermetic chamber **601**, with hermetic door **610** being located there between. In the modified apparatus, the tube would inherently be inserted into the first opening of the first hermetic chamber **601** from the second hermetic

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chamber 611 (i.e., see Bassereau, wherein tube 4a is inserted into first opening 2a via auxiliary chamber 7, or the second hermetic chamber).

Regarding claims 11 and 12, Tejima et al. (FIG. 8) discloses an exhaust system 606 connected to the first hermetic chamber 601 via the second hermetic chamber 611. As modified by Bassereau (column 4, lines 19-43), the third opening of the tube and the exhaust system 606 would inherently be hermetically connected when the tube is inserted into the first opening of the first hermetic chamber 601.

Regarding claims 13 and 14, invoking 35 U.S.C. 112, Sixth Paragraph, Applicants disclose on page 27, line 23 to page 28, line 5 of the specification that the, “means for performing pressure regulation,” may comprise “an exhaust means, a pressurizing means, and a pressure measuring means,” wherein the exhaust means may comprise “various kind of vacuum pumps,” the pressurizing means may comprise a gas introduced into the system, and the pressure measuring means may comprise “a Bourdon tube, a Pirani gauge, or the like.” Also, Tejima et al. discloses means (i.e., a “pressure control system” comprising a “pressurization system”, an “exhaust system” and a “pressure sensor”; section.[0286]; FIG. 7) for performing pressure regulation for the second hermetic chamber 611 and the first hermetic chamber 601. In the modified apparatus of Tejima et al., the provision of the tube (i.e., condenser tube 4a of Bassereau) would inherently define “a space” between the tube and the second hermetic chamber 611, and therefore, the means for performing pressure regulation would inherently perform pressure regulation in such space. Although the collective teachings of Tejima et al. and Bassereau are silent as to the relative pressure measurements in the recited locations of the apparatus (i.e., within the space between the tube and the second hermetic chamber, or within the

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first hermetic chamber, or within the tube), the modified apparatus of Tejima et al. meets the claim, since the specific pressures will depend on the intended use of the apparatus, and furthermore, the disclosed means for performing pressure regulation substantially comprise the recited structural elements, and are thus inherently capable of performing the claimed functions. Also, it would have been obvious choice for one of ordinary skill in the art at the time the invention was made to select an appropriate pressure for the respective locations in the modified apparatus of Tejima, on the basis of suitability for the intended use, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 15, Tejima et al. discloses the means for performing pressure regulation has a means for supplying a carrier gas to the second hermetic chamber 611 (i.e. "it may be made to connect a carrier gas introduction system to the recovery chamber 611"; section [0294]), and thus, inherently, to a space between the tube and the second hermetic chamber.

Regarding to claims 16 and 17, Tejima et al. discloses the provision of a filter means comprising a wet filter (i.e. exhaust gas washing apparatus 2006 with alkaline-water shower, for example; section [0339], [0344], [0347]) in a separate embodiment of the invention. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a filter means, such that it were placed between the second hermetic chamber 611 and the exhaust system 606, in the modified apparatus of Tejima et al., since the filter means would enable the purification of exhaust gas to environmentally safe levels, as taught by Tejima et al.

Regarding claim 18, Bassereau teaches, "it is required simply to wait until the condenser of the preceding operation is sufficiently cooled to permit opening of the auxiliary chamber, to



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remove the full condenser and insert an empty condenser,” column 3, lines 1-16). Thus, the second hermetic chamber of the modified apparatus would, inherently, comprise a second hermetic door for replacing the tube with a second tube.

Regarding claim 19, Tejima discloses means for regulating a temperature in the second hermetic chamber 611 (i.e., “temperature control means”; sections [0294], [0297]).

Regarding claim 20, Tejima discloses means for supplying a non-oxidizing gas to the second hermetic chamber 611 (i.e., “it may be made to connect to a carrier gas introduction system; section [0294]).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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\* \* \*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer A. Leung  
May 20, 2005 *JAL*

*Hien Tran*

**HIEN TRAN**  
**PRIMARY EXAMINER**